UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,392	12/21/2001	Barnes Cooper	42390P13464	1166

8791　　7590　　08/12/2005	**EXAMINER**
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SEVENTH FLOOR	ART UNIT	PAPER NUMBER
LOS ANGELES, CA 90025-1030	2116	

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	10/027,392	COOPER, BARNES
Office Action Summary	Examiner	Art Unit	
	Stefan Stoynov	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>15 June 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>31-35</u> is/are allowed.

6)☒ Claim(s) <u>1-3,9-23,29 and 30</u> is/are rejected.

7)☒ Claim(s) <u>4-8 and 24-28</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

The rejections are respectfully maintained and reproduced infra for applicant's

convenience.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter.

Re claim 11, the specification defines the program or code segments may be stored in

a processor readable medium or transmitted by a computer data signal embodied in a carrier

wave, or a signal modulated by a carrier, over a transmission medium (paragraph 0013, lines

10-13). Further, examples for processor readable medium include a radio frequency (RF) link

(paragraph 0013, line 17) and for the transmission medium – air and RF links (paragraph

0013, line 19). The media listed above is intangible. Therefore the "machine usable medium

having computer program code embedded therein" is incapable of being touched or

perceived absent the tangible medium through which it is conveyed thus rendering the claim

non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
      obviousness or nonobviousness.

Claims 1-3, 9-13, 19-23, 29, and 30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Nakamura in view of Sun.

Re claims 1, Nakamura discloses a method comprising:

loading the SMI timer with a timer value (column 8, lines 26-28) based on the

processor state (column 17, lines 65-67, column 18, lines 1-6, lines 18-21), the timer value

being one of a first value and a second value (FIG. 11C, T1 and T2);

Nakamura also discloses the processor having an operational state (column 6, lines 1-

4) and a low power state (column 6, lines 7-10).

Nakamura fails to disclose determining the processor state upon expiration of a

system management interrupt (SMI) timer and transitioning the processor to one of the

operational state and the low power state according to the processor state.

Sun teaches a CPU receiving a SMI signal from a timer upon which a SMI handler is

invoked (column 3, lines 53-55). Sun does not specifically teach the SMI signal being

generated upon expiration of the timer. However, Sun teaches the timer supplying the SMI

signal to the CPU periodically, being activated after a given sampling period (column 3, lines

14-18, column 3, lines 27-29) thus the SMI signal is being generated periodically upon

expiration of the timer. Sun further teaches the SMI handler (invoked by the SMI) determining

the usage state for each device and based on this determination adapting the power

management parameters for the device (transitioning or not the device to reduced power) (column 3, lines 53-67). In Sun, the described method is used to continually adapt the computer's power distribution to the current usage parameters. This avoids active devices being powered down and at the same time conserving energy by reducing power to idle devices (column 2, lines 10-14). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the device usage state determination and power transitioning method by means of SIM signal generated upon expiration of a timer, as suggested by Sun with the method disclosed by Nakamura in order to implement determining a processor state of a processor upon expiration of a system management interrupt (SMI) timer and transitioning the processor to one of operational state and a low power state according to the processor state.

Re claim 11, Sun further teaches a computer program product comprising:

a machine usable medium having computer program code embedded therein (column 3, lines 12-18, lines 53-55), the computer program product having:

computer readable program code to determine a processor state of a processor (column 3, lines 53-67) upon expiration of a system management interrupt (SMI) timer (column 3, lines 14-18, column 3, lines 27-29)

transitioning the processor to one of the operational state and the low power state according to the processor state (column 2, lines 10 and 11, column 3, lines 53-67)

Re claim 11, Nakamura further discloses:

the processor state being one of an operational state (column 6, lines 1-4) and a low power state (column 6, lines 7-10);

computer readable program code to load the SMI timer with a timer value (column 8, lines 26-28) based on the processor state (column 17, lines 65-67, column 18, lines 1-6, lines 18-21), the timer value being one of a first value and a second value (FIG. 11C, T1 and T2);

Re claim 21, Nakamura further discloses a system comprising:

a processor (FIG. 1, 11);

a memory coupled to the processor (FIG. 1) to store the throttling emulator (column 7, lines 28-32, lines 38-42), the throttling emulator when executed, causing the processor to:

load the SMI timer with a timer value (column 8, lines 26-28) based on the processor state (column 17, lines 65-67, column 18, lines 1-6, lines 18-21), the timer value being one of a first value and a second value (FIG. 11C, T1 and T2);

Re claim 21, Sun further teaches:

determine a processor state of a processor (column 3, lines 53-67) upon expiration of a system management interrupt (SMI) timer (column 3, lines 14-18, column 3, lines 27-29)

transition the processor to one of the operational state and the low power state according to the processor state (column 2, lines 10 and 11, column 3, lines 53-67)

Re claims 2, 12, and 22, Nakamura further discloses the method, computer program product, and system comprising:

loading the SMI timer with first value (column 17, line 67, column 18, lines 1-6, and FIG. 11C, T2) if the processor state is the operational state (FIG. 11B); and

loading the SMI timer with the second value (column 18, lines 18-30 and FIG. 11C, T1) if the processor sate is the low power state (FIG. 11B).

Re claims 3, 13, and 23 Nakamura further discloses the method, computer program product, and system comprising:

transitioning the processor to the operational state if the processor state is the low

power state (FIG. 11B); and

transitioning the processor to the reduced power state if the processor is operational

state (FIG. 11B).

Re claims 9, 19, and 29, Nakamura further discloses the method, computer program

product, and system comprising:

transitioning the processor to a sleep state (column 6, lines 34-39 and FIG. 2).

Re claims 10, 20, and 30, Nakamura further discloses the method, computer program

product, and system comprising:

loading the SMI timer in a chipset (column 7, lines 10-13, gate array defined as chip in

Microsoft Computer Dictionary, Fifth Edition).

Response to Arguments

Re claim 11, the examiner agrees that carrier waves *per se* are not non-statutory

subject matter. However, the claim was rejected because the claimed program or code

segments are transmitted by a computer data signal embodied in a carrier wave. Therefore

the "machine usable medium having computer program code embedded therein" is incapable

of being touched or perceived absent the tangible medium through which it is conveyed thus

rendering the claim non-statutory. In addition, applicant's example based on "Examination

Guidelines for Computer-Related Inventions", page 38 (March 1996) is no longer valid.

Claims 12-20 are rejected on the same grounds as independent claim 11 upon which

they are dependent.

Re claims 1-3, 9-13, 19-23, 29, and 30 the examiner respectfully disagrees with

applicant's argument that the methodology, as suggested by Sun is not proper for the

process of determining whether a processor is in a low power or operational state.

In considering disclosure of reference, it is proper to take into account not only specific teachings of reference but also inferences which one skilled in the art would reasonably be expected to draw therefrom. – *In re Preda*, 159 USPQ 342 (CCPA 1968).

As addressed in the previous office action, the usage state for a device (e.g. processor) is determined upon expiration of a system management interrupt (SMI) timer and based on this determination the device (processor) is selectively transitioned to reduced power state. In addition, it could be inferred that when a device (processor) has low utilization rate (low usage) it consumes less power (i.e. low power state) and upon ramping up the usage during normal operation (i.e. operational state) the power increases accordingly, and thus Sun teaches determining whether a processor is in a low power or operational state.

Claims 4-8, 14-18, and 24-28 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (per office action mailed on March 15, 2005).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Applicant's arguments filed June 15, 2005 have been fully considered but they are not

persuasive.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Stefan Stoynov whose telephone number is (571) 272-4236.

The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status information for

unpublished applications is available through Private PAIR only. For more information about

the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to

the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197

(toll-free).

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